Patent Claims

1. Method for the fuel-optimized selection of a configuration of thrusters on a spacecraft, wherein for the purpose of finding a low-fuel solution for the selection process the solution of a linear optimization problem is resolved through

   - an initialization phase for finding a first permissible solution to the linear optimization problem and

   - a subsequent iteration phase, in which, proceeding on the permissible solution to the linear optimization problem, an iterative optimization of an effectiveness criterion takes place,

   characterized in that

   - with each iteration step a scaled iteration gradient is formed and

   - the iteration gradient is multiplied with a limiting factor for a maximum iteration step width, which is formed while taking at least one boundary value condition for a permissible solution into account.

2. Method pursuant to claim 1, characterized in that as a boundary value condition an upper bound for a permissible solution is defined.

3. Method pursuant to one of the claims 1 or 2, characterized in that the iteration gradient is determined with the help of a Gauss elimination.

4. Method pursuant to one of the claims 1 through 3, characterized in that in each iteration step a scaling of the iteration gradient occurs such that a gradient

component becomes smaller the closer the appropriate component of the result of the previous iteration step comes to a boundary value condition.

5. Method pursuant to one of the claims 1 through 4, characterized in that the iteration phase is terminated as soon as the result of an iteration step exceeds at least one boundary value condition, and in that the result of the previous iteration step is determined as an optimal solution of the effectiveness criterion.

6. Method pursuant to one of the claims 1 through 4, characterized in that the iteration phase is terminated as soon as the iteration method converges against a permissible solution and the result of a certain iteration step differs from the result of a previous iteration step by less than a pre-defined distance, wherein the result of the last iteration step is determined as an optimal solution of the effectiveness criterion.